Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Broadcast Localism	)	MB 04-233
	)	
	)	

To the Commission:

Comments of Nickolaus E. Leggett, N3NL
Amateur Radio Operator

I am one of the original petitioners for the establishment of the Low Power FM (LPFM) radio broadcasting service (RM-9208 July 7, 1997 subsequently included in MM Docket 99-25). I am also a certified electronics technician (ISCET and NARTE) and an Extra Class amateur radio operator (call sign N3NL). I have a Master of Arts degree in Political Science from the Johns Hopkins University. I am an inventor holding three United States patents. My latest patent is a wireless bus for digital devices (U.S. Patent No. 6,771,935 issued on August 3, 2004).

My comments propose specific technical and regulatory steps to increase localism in American broadcasting.

Authorization to Submit Written Comments

The Commission's announcement of the hearings in Maine on localism specifically authorized members of the public to file written comments to this docket. I am filing these comments under this authorization. These

comments are in addition to comments that I filed in previous years in this docket.

Specific Steps to Increase Localism in Broadcasting

The Commission should take some or all of the following steps to increase localism in broadcasting:

1. The Commission should issue a Notice of Proposed Rulemaking (NPRM) proposing the establishment of a low power AM (LPAM) radio broadcasting service. This service would provide additional broadcast opportunities to residents of underprivileged areas of the Nation. Refer to Docket **RM-11287** for detailed discussion of this proposed new service.
2. The Commission should open a filing window for LP-10 low power FM (LPFM) radio broadcasting stations. The regulatory structure already exists for this step. LP-10 stations are especially low power stations (10 Watts) that can be fit into the spectrum where LP-100 (100 Watt) stations cannot be accommodated.
3. The Commission should issue a Notice of Inquiry (NOI) on the prospects for operating neighborhood broadcasting services in the millimeter and light wave frequencies. The use of the lighthouse protocol proposed by Nickolaus E. Leggett, N3NL, can be examined in this docket (Appendix A). The millimeter

waves and light waves offer a huge amount of spectrum space that can accommodate thousands of broadcast channels within each community. This could provide a "right to broadcast" which is as robust as the current right to publish paper documents.

4. The Commission should issue an advisory opinion recommending a more reasonable royalty system for the broadcast of music on the Internet as well as other broadcast media.
5. The Commission should issue a NOI on the Constitutionality of license auctions and their impacts on the rights of those individuals and organizations that are not rich. It is clear that license auctions work directly against localism.
6. The Commission should issue a NOI to examine the establishment of an Experimenters' Radio Service where individual inventors and experimenters could develop and test new broadcast radio technologies. This service would be oriented towards the independent inventor and experimenter.
7. The Commission should issue an NPRM establishing a higher power limit for Part 15 transmissions within the AM broadcast band.

Benefits of these Localism Steps

This set of steps increase localism by increasing the number of broadcast stations available in each community of the Nation. The shortage of broadcast frequencies would effectively be removed. Underprivileged neighborhoods would be able to set up their own broadcast media for community development and organization. This would be a major advantage for tribal, African-American, and Latino poor communities that currently do not have their own media. It would also allow other minorities such as women expanded access to the broadcasting industry.

Requested Action

The Commission should take these suggested steps to increase localism in broadcasting throughout America. Broadcasting should not be restricted to just the giant corporate organizations. All Americans should have direct access to the microphone just as they have access to the pen and the keyboard. We all have the right to broadcast.

Respectfully submitted,

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Appendix A – Using the Lighthouse Protocol for Local Broadcasting

Physical Aspects of Millimeter Wave Broadcasting

A millimeter wave installation is typically engaged in point-to-point communication using a narrow beam formed by very high gain antennas. This communication is often referred to as "pencil beam" communication.

Clearly, a fixed pencil beam is the opposite of the broad coverage desired for broadcasting service.

However, a pencil beam can be converted into an omni-directional broadcasting system by using a rotating beam. The high-gain transmitting antenna is mounted so that it can be continuously rotated in a similar manner to a plan position indicator (PPI) radar antenna. The transmitting millimeter wave beam would "paint" the surrounding geographic area like an electronic lighthouse.

Lighthouse Protocol for Broadcasting

The neighborhood broadcasting station would transmit packets of digital program material to the broadcast receivers. Each receiver would store the packets and play the program material to the listener.

The station would use a protocol where the same set of packets would be repeated for each beam width around the points of the compass. For example, if the transmitter's antenna has a 10-degree beam width, it would transmit 36 repetitions of the packet set. Each repetition would be at a different compass direction to cover a full 360 degrees.

The radio receivers would put the packets together and play them out to the listeners. This would result in the program material being delayed somewhat from real time, but this would not be a major problem for most neighborhood broadcasting applications.

The Benefit of Limited Range

Another interesting facet of the millimeter waves is that there is significant atmospheric absorption of the signals. This is a major problem for many potential users, but it is actually useful for neighborhood broadcasting. This absorption would prevent a neighborhood broadcaster operating in Reston, Virginia from interfering with a nearby neighborhood broadcaster in another town. Each broadcaster would be limited to a naturally enforced coverage area.